

SEQUENCE LISTING

<110> Hastings, Gregg
Dillon, Patrick

<120> Human Neuronal Attachment Factor-1

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<140> 09/170,042

<141> 1988-10-13

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<170> PatentIn version 3.0

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Lys Ala Leu Cys Ala Leu Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln
15 20 25

cct ctt ggg gga gag tcc atc tgt tcc gcc aga gcc ctg gcc aaa tac 147
Pro Leu Gly Gly Glu Ser Ile Cys Ser Ala Arg Ala Leu Ala Lys Tyr
30 35 40

agc atc acc ttc acg ggc aag tgg agc cag acg gcc ttc ccc aag cag 195
Ser Ile Thr Phe Thr Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln
45 50 55

tac ccc ctg ttc cgc ccc cct gcc cag tgg tct tcg ctg ctg ggg gcc 243
Tyr Pro Leu Phe Arg Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala
60 65 70 75

gcg cat agc tcc gac tac agc atg tgg agg aag aac cag tac gtc agt 291
Ala His Ser Ser Asp Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val Ser
80 85 90

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Asn Gly Leu Arg Asp Phe Ala Glu Arg Gly Glu Ala Trp Ala Leu Met
95 100 105

aag gag atc gag gcg gcg ggg gag gcg ctg cag agc gtg cac gcg gtg 387
Lys Glu Ile Glu Ala Ala Gly Glu Ala Leu Gln Ser Val His Ala Val
110 115 120

ttt tcg gcg ccc gcc gtc ccc agc ggc acc ggg cag acg tcg gcg gag 435
Phe Ser Ala Pro Ala Val Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu
125 130 135

ctg gag gtg cag cgc agg cac tcg ctg gtc tcg ttt gtg gtg cgc atc	483
Leu Glu Val Gln Arg Arg His Ser Leu Val Ser Phe Val Val Arg Ile	
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Val Pro Ser Pro Asp Trp Phe Val Gly Val Asp Ser Leu Asp Leu Cys	
160 165 170	
gac ggg gac cgt tgg cgg gaa cag gcg gcg ctg gac ctg tac ccc tac	579
Asp Gly Asp Arg Trp Arg Glu Gln Ala Ala Leu Asp Leu Tyr Pro Tyr	
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gac gcc ggg acg gac agc ggc ttc acc ttc tcc tcc ccc aac ttc gcc	627
Asp Ala Gly Thr Asp Ser Gly Phe Thr Phe Ser Ser Pro Asn Phe Ala	
190 195 200	
acc atc ccg cag gac acg gtg acc gag ata acg tcc tcc tct ccc agc	675
Thr Ile Pro Gln Asp Thr Val Thr Glu Ile Thr Ser Ser Ser Pro Ser	
205 210 215	
cac ccg gcc aac tcc ttc tac tac ccg cgg ctg aag gcc ctg cct ccc	723
His Pro Ala Asn Ser Phe Tyr Tyr Pro Arg Leu Lys Ala Leu Pro Pro	
220 225 230 235	
atc gcc agg gtg aca ctg gtg cgg ctg cga cag agc ccc agg gcc ttc	771
Ile Ala Arg Val Thr Leu Val Arg Leu Arg Gln Ser Pro Arg Ala Phe	
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atc cct ccc gcc cca gtc ctg ccc agc agg gac aat gag att gta gac	819
Ile Pro Pro Ala Pro Val Leu Pro Ser Arg Asp Asn Glu Ile Val Asp	
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Ser Ala Ser Val Pro Glu Thr Pro Leu Asp Cys Glu Val Ser Leu Trp	
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tcg tcc tgg gga ctg tgc gga ggc cac tgt ggg agg ctc ggg acc aag	915
Ser Ser Trp Gly Leu Cys Gly Gly His Cys Gly Arg Leu Gly Thr Lys	
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agc agg act cgc tac gtc cgg gtc cag ccc gcc aac aac ggg agc ccc	963
Ser Arg Thr Arg Tyr Val Arg Val Gln Pro Ala Asn Asn Gly Ser Pro	
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Cys Pro Glu Leu Glu Glu Glu Ala Glu Cys Val Pro Asp Asn Cys Val	
320 325 330	
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 35 40 45
 Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr Pro Leu Phe Arg
 50 55 60
 Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala Ala His Ser Ser Asp
 65 70 75 80
 Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val Ser Asn Gly Leu Arg Asp
 85 90 95
 Phe Ala Glu Arg Gly Glu Ala Trp Ala Leu Met Lys Glu Ile Glu Ala
 100 105 110
 Ala Gly Glu Ala Leu Gln Ser Val His Ala Val Phe Ser Ala Pro Ala
 115 120 125
 Val Pro Ser Gly Thr Gly Gln Thr Ser Ala Glu Leu Glu Val Gln Arg
 130 135 140
 Arg His Ser Leu Val Ser Phe Val Val Arg Ile Val Pro Ser Pro Asp
 145 150 155 160
 Trp Phe Val Gly Val Asp Ser Leu Asp Leu Cys Asp Gly Asp Arg Trp
 165 170 175
 Arg Glu Gln Ala Ala Leu Asp Leu Tyr Pro Tyr Asp Ala Gly Thr Asp
 180 185 190
 Ser Gly Phe Thr Phe Ser Ser Pro Asn Phe Ala Thr Ile Pro Gln Asp
 195 200 205
 Thr Val Thr Glu Ile Thr Ser Ser Ser Pro Ser His Pro Ala Asn Ser
 210 215 220
 Phe Tyr Tyr Pro Arg Leu Lys Ala Leu Pro Pro Ile Ala Arg Val Thr
 225 230 235 240
 Leu Val Arg Leu Arg Gln Ser Pro Arg Ala Phe Ile Pro Pro Ala Pro

245

250

255

Val Leu Pro Ser Arg Asp Asn Glu Ile Val Asp Ser Ala Ser Val Pro
 260 265 270

Glu Thr Pro Leu Asp Cys Glu Val Ser Leu Trp Ser Ser Trp Gly Leu
 275 280 285

Cys Gly Gly His Cys Gly Arg Leu Gly Thr Lys Ser Arg Thr Arg Tyr
 290 295 300

Val Arg Val Gln Pro Ala Asn Asn Gly Ser Pro Cys Pro Glu Leu Glu
 305 310 315 320

Glu Glu Ala Glu Cys Val Pro Asp Asn Cys Val
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<222> (1)..(36)

<223> 5' primer containing a BamHI restriction enzyme site followed by
 21 nucleotides of NAD-1 coding sequence.

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<223> 3' primer containing complementary sequence to an XbaI site
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 <213> rat

<400> 7

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Glu	Gln	Asp	Pro	Thr	Leu	Asp	Gly	Val	Thr	Asp	Arg	Pro	Ile	Leu	Asp	35	40	45	
Cys	Cys	Ala	Cys	Gly	Thr	Ala	Lys	Tyr	Arg	Leu	Thr	Phe	Tyr	Gly	Asn	50	55	60	
Trp	Ser	Glu	Lys	Thr	His	Pro	Lys	Asp	Tyr	Pro	Arg	Arg	Ala	Asn	His	65	70	75	80
Trp	Ser	Ala	Ile	Ile	Gly	Gly	Ser	His	Ser	Lys	Asn	Tyr	Val	Leu	Trp	85	90	95	
Glu	Tyr	Gly	Gly	Tyr	Ala	Ser	Glu	Gly	Val	Lys	Gln	Val	Ala	Glu	Leu	100	105	110	
Gly	Ser	Pro	Val	Lys	Met	Glu	Glu	Glu	Ile	Arg	Gln	Gln	Ser	Asp	Glu	115	120	125	
Val	Leu	Thr	Val	Ile	Lys	Ala	Lys	Ala	Gln	Trp	Pro	Ser	Trp	Gln	Pro				

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Arg His Leu Met Ser Phe Leu Thr Met Met Gly Pro Ser Pro Asp Trp		
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Asn Val Gly Leu Ser Ala Glu Asp Leu Cys Thr Lys Glu Cys Gly Trp		
	180	185 190
Val Gln Lys Val Val Gln Asp Leu Ile Pro Trp Asp Ala Gly Thr Asp		
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Ser Gly Val Thr Tyr Glu Ser Pro Asn Lys Pro Thr Ile Pro Gln Glu		
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Lys Ile Arg Pro Leu Thr Ser Leu Asp His Pro Gln Ser Pro Phe Tyr		
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Asp Pro Glu Gly Gly Ser Ile Thr Gln Val Ala Arg Val Val Ile Glu		
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Arg Ile Ala Arg Lys Gly Glu Gln Cys Asn Ile Val Pro Asp Asn Val		
	260	265 270
Asp Asp Ile Val Ala Asp Leu Ala Pro Glu Glu Lys Asp Glu Asp Asp		
	275	280 285
Thr Pro Glu Thr Cys Ile Tyr Ser Asn Trp Ser Pro Trp Ser Ala Cys		
	290	295 300
Ser Ser Ser Thr Cys Glu Lys Gly Lys Arg Met Arg Gln Arg Met Leu		
	305	310 315 320
Lys Ala Gln Leu Asp Leu Ser Val Pro Cys Pro Asp Thr Gln Asp Phe		
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Gln Pro Cys Met Gly Pro Gly Cys Ser Asp Glu Asp Gly Ser Thr Cys		
	340	345 350
Thr Met Ser Glu Trp Ile Thr Trp Ser Pro Cys Ser Val Ser Cys Gly		
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Gly Met Gly Met Arg Ser Arg Glu Arg Tyr Val Lys Gln Phe Pro Glu		
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Ala Arg Lys Cys
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Gly Gly Gly Ile Gln Glu Arg Tyr Met Thr Val Lys Lys Arg Phe Lys
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Asn Val His Pro Cys
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Lys Gly Met Arg Ser Arg Thr Arg Met Val Lys Met Ser Pro Ala Asp
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Gly Ser Pro Cys Pro Asp Thr Glu Glu Ala Glu Lys Cys Met Val Pro
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cagagccccg gccaaataca gcatcacctt cacgggcaag tggagccaga cggccttccc 180
caagcagtac cccctgttcc gccccctgc gcatggtnnt cgctgctggg ggccgcgcat 240
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ncggagcggc gaggcctnng ncgttgatga aggagatccg ggnggcgggg gaggcgtnca 360
anaggtgnca agagttnttt tcggggcccc gttccccaan ggnaacnggn aaacgttggg 420
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cgccccggtnn cccagcgnca ccnggcagac gtcggcgaac tggaggtgc agcgcaggca	180
ctcgctggtc tcgtttgtgg tgcgcacgt gccagcccc gactggttcg tgggcgtgga	240
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cgccccggttn cccagcgnca ccnggcagac gtcggcgaac tggaggtgc agcgcaggca	180
ctcgctggtc tcgtttgtgg tgcgcacgt gccagcccc gactggttcg tgggcgtgga	240
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nccctacgac gncggg	316

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Cys	Glu	Val	Ser	Leu	Trp	Ser	Ser	Trp	Gly	Leu	Cys	Gly	Gly	His	Cys
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			20					25					30		

Ala	Asn	Asn	Gly	Ser	Pro	Cys	Pro	Glu	Leu	Glu	Glu	Glu	Ala	Glu	Cys
		35					40					45			

Val	Pro	Asp	Asn	Cys
	50			